Nautilus

NE 1000/ 2000/ 3000
ELLIPTICAL TRAINERS

Owner's Manual
& Fitness Handbook

NE 1000

NE 2000

NE 3000

CONGRATULATIONS!

Thank you for making Nautilus a part of your exercise program. For many years to come, you will be able to rely on the quality of Nautilus craftsmanship and durability. We have included some general fitness guidelines for your use and hope you will find the information valuable in assisting you in your pursuit of a healthy lifestyle.

Your Nautilus elliptical trainer will enable you to customize and monitor your workouts to:

> Increase your energy level

> Increase cardiovascular and aerobic fitness

> Increase lower body muscle strength

> Decrease your overall percentage of body fat

Whether you are just getting started in an exercise program or are already physically fit, Nautilus ellipticals are designed to be an efficient, easy and enjoyable way to achieve an improved level of fitness. You can exercise your way to a more fit and healthy body. The on-board digital computer enables you to accurately monitor your progress by tracking time, distance, speed, calories per hour, watts, total calories, RPMs and heart rate.

This Owner's Manual contains all the information you need to operate and enjoy your machine. Please read the manual in its entirety before attempting to exercise.
Let's get started.

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FITNESS SAFEGUARDS

Failure to follow any of these safeguards may result in injury or serious health problems.

> Do not place fingers or any other objects into moving parts of the exercise equipment.
> Keep children and pets away from the machine. A child's curiosity may result in injury.
> Do not allow children to use the machine. The machine is designed and intended for adults, not children.
> To avoid entanglement and possible injury, do not expose hands or arms to the drive mechanism.
> Do not dismount the machine until the pedals are at a complete STOP.
> Warn bystanders to keep a safe distance. Do not allow anyone to touch the machine while it is in operation.

FITNESS SAFEGUARDS

Before starting any exercise program, consult with your physician or health professional. He or she can help establish the exercise frequency, intensity (target heart rate zone) and time appropriate for your particular age and condition. If you have any pain or tightness in your chest, an irregular heartbeat, shortness of breath, feel faint or have any discomfort while you exercise, STOP! Consult your physician before continuing.

OPERATION

HOW TO USE YOUR NAUTILUS ELLIPTICAL TRAINER

> Getting Started

To get on your elliptical trainer, begin by having either the right or left foot pedal, whichever you plan on stepping up on, in its lowest position or six o'clock. This will prevent the foot pedal from moving while you are entering the machine. Step up with either foot on to that foot pedal. Grasp the horseshoe handlebar with both hands before stepping up with your other foot. To exit the machine, make sure that the foot pedals are completely stopped and perform the above process in reverse.

> Upper Body Exercise

Your elliptical trainer enables you to use the machine with or without the upper body exercise arms. Using the moving upper body arms incorporates major muscle groups and can allow you to workout at a higher resistance level or for a longer period of time. To begin your workout you may want to only use your lower body keeping your hands on the horseshoe. Then as your legs become fatigued move your hands to the upper body arm position. You will want to experiment some to find out what's right for you.

> Forward and Reverse Motion

Your elliptical trainer is designed to allow you to exercise in both a forward and reverse pedaling motion. This will work slightly different muscle groups as well as adding variety to your workouts. The pedaling direction can be easily changed during your workout. In the beginning the forward motion may feel more natural as it is more similar to a running or jogging motion. Again, you will want to experiment slightly to determine what's right for your fitness program.

> Resistance Adjustment

You have full control over the levels of resistance you use in your workout. Lower resistance levels typically enables you to move at a faster pace, placing increased demand on your cardiovascular system. Higher resistance levels will typically deliver more of muscle/ endurance workout at the lower speeds. But everyone is different. Gradually experiment to find the beginning resistance that is comfortable for you.

OPERATION

OPERATING YOUR NE 1000 COMPUTER

Your Nautilus NE 1000 computer allows for a great amount of workout variety and options while being a simple easy to operate design. The 1000 computer requires (4) AA batteries for operation.
The resistance of the 1000 is controlled by the Tension Knob located on the Console Mast just below the computer. You have 16 levels of resistance. To increase resistance turn the Tension Knob clockwise. Turning the Knob counterclockwise will decrease resistance.

Begin slowly with a resistance level you are comfortable with. As your fitness level improves you will slowly strive to increase your resistance.

> English or Metric Selection

When your computer is first powered up or when batteries have been replaced, you will need to select Miles or Kilometer readouts. To have the computer display in English (Miles), press the ARROW key until the "E" is lit on the display. Press ENTER/QUICK START to confirm. Select the "M" to display in Metric (Kilometers)

> fig.1

> Operation

To begin you can simply press the ENTER/QUICK START button and begin exercising. You may also select a target goal of time or distance.
1. To select a goal of distance, press the top SCAN key. To select a goal of time, press the bottom SCAN key.
2. Using the + or – ARROW keys enter your workout goal (Example: 35:00). Then begin your workout, when your workout goal is reached the beeper will sound letting you know your workout is complete.

> Computer Readouts

Speed > Current Speed at which you are pedaling displayed in MPH or KPH

Distance > Total distance for your current workout

RPM > Current pedal revolutions per minute.

Average Speed > Your average pedaling speed in MPH or KPM

Heart Rate > Your current heart rate displayed as beats per minute.
(Note: Both hands must be on metal heart rate sensors for this feature to operate.)

Calories > Approximate calories burned for the current workout.

Odometer > Total distance on the bike for the life of the machine displayed in miles or km.
(Note: This feature is reset if batteries are removed.)

Time > Total duration of workout.

Average Speed Arrows > An arrow will flash in the left side of the upper display window to indicate whether your current speed is above or below your average speed. When the upper arrow is lit your current speed is higher than your average speed.

Scan > Using the two SCAN keys to the right of the display, you may either select a single readout be displayed constantly or you can automatically scroll through each of the readouts every few seconds. A small circle will be lit up the right side of the display to let you know the Scan function is on.

OPERATING YOUR NE 2000 COMPUTER

For added workout variety, the on-board computer features a selection of pre-programmed workouts as well as a manual mode program. The manual mode program can be easily accessed pressing the "Enter/Quick Start" button. All other workout programs require you to input data. The computer also features multi-feed-back functions and easy-to-read LED displays to keep track of your workout performance and progress. By taking a few moments to fully understand the computer operation and functions, you will get more pleasure, motivation and value from your workouts. It's really very easy.

> Accessing the Computer Workout Programs

You have two options of accessing programs: 1. Utilize the "Quick Start" feature or 2. Program the computer by entering specific data as explained below.

> Quick Start

To utilize the Quick Start feature on the computer, simply begin pedaling. Press the "Enter/Quick Start" button and the computer will begin immediately. The default setting for the Quick Start program is a manual program with a resistance level of three. You can easily change the resistance level at any time by pushing the + or - keys.

> fig.2

> Pre-Programmed Workouts

For added workout variety and challenge, the 2000 computer has 6 workout courses each specifically designed to help your achieve maximum results from each workout. Your bike offers 20 levels of intensity to accommodate all fitness levels from first time exer-ciser to elite athlete.

1. Select programs P1 through P6 using the + and – keys. The program hill profile will appear in the large --dot-matrix display. The higher the hill, the greater the pedaling resistance. Press the ENTER/QUICK START key to confirm your selection. The NE 2000 computer also has 2 custom programs (see page 6 for instructions)

2. Enter your weight by using the + or – keys and press ENTER/QUICK START to confirm.

3. Enter your time using the + or – keys and press ENTER/QUICK START to confirm.

4. The current workout segment will be displayed on the left LED column. The course will scroll from right to left.

5. Each program course profile has 50 individual segments. The time you enter is equally divided by these 50 segments giving you your segment time.
Example: A 25 minute workout would have a segment time of 30 seconds.

> Results mode

At the completion of your workout the computer will go into a results mode. This mode will scroll through your workout average watts, calories per hour, average heart rate, average speed, average rpm, total calories, time and distance.

OPERATION

OPERATING YOUR NE 3000 COMPUTER

> Getting Started

Your NE 3000 elliptical has an internal generator that provides electrical power to the computer display. This means your never need batteries or have to plug in your machine, simply pedal at 25 RPM or higher to activate the computer.

> fig.3

> Using your NE 3000 Computer

For added workout variety, the on-board computer features a selection of pre-programmed workouts as well as a manual mode program. The manual mode program can be easily accessed by pressing the QUICK START button. All other workout programs require you to input data. The computer also features multi-feedback functions and easy-to-read LED displays to keep track of your workout performance and progress (Fig.3). By taking a few moments to fully understand the computer operation and functions, you will get more pleasure, motivation and value from your workouts. It's really very easy.

Accessing the Computer Workout Programs

You have two options of accessing programs: 1. Utilize the "Quick Start" feature or 2. Selecting one of the pre-programmed workouts.

> fig.4

NE 3000 Computer Controls

The NE 3000 features unique remote computer controls. This allows you to control the operation of your machine without every having to take your hands off the handgrips. The right hand controls have + and – buttons to allow you to input data and change resistance. On the left hand controls you will find the ENTER and QUICK START buttons. These buttons operate just the same as the buttons on the console face. Simply use your thumb to press keys as desired. (Fig. 4).

> Quick Start

To utilize the Quick Start feature on the computer, simply begin pedaling. Press the QUICK START button and the computer will begin immediately. The default setting for the Quick Start program is a manual program with a resistance level of three. You can easily change the resistance level at any time by pushing the + or - keys.

> Pre-Programmed Workouts

For added workout variety and challenge, the 3000 computer has 6 workout courses each specifically designed to help your achieve maximum results from each workout. Your machine also features two Custom Programs and a Fitness Test program to help you better track your fitness progress. Each program has 20 levels of intensity to accommodate all fitness levels from first time exerciser to elite athlete.

1. Select desired program by using the + and – keys. The program hill profile will appear in the large dot-matrix display. The higher the hill, the greater the pedaling resistance. Press the ENTER key to confirm your selection.

2. Enter your weight by using the + or – keys and press ENTER to confirm.

3. Enter your time using the + or – keys and press ENTER to confirm and begin your workout.

4. The current workout segment will be displayed on the left LED column. The course will scroll from right to left.

OPERATING YOUR NE 3000 COMPUTER

5. Each program course profile has 50 individual segments. The time you enter is equally divided by these 50 segments giving you your segment time.
Example: A 25 minute workout would have a segment time of 30 seconds.

> Results Mode

At the completion of your workout the computer will go into a Results Mode. This mode will scroll through your workout average watts, calories per hour, average heart rate, average speed, average rpm, total calories, time and distance.

HEART RATE TRAINING

> fig.5

> Heart Rate Monitoring

All Nautilus ellipticals are equipped with touch heart rate. To use the touch heart rate feature simply place both hands on the metal handgrip sensors making sure both your palms are in contact on the front side and your fingers are in contact on the opposite side (Fig. 5). The NE 2000/ 3000 computer will also receive and display your heart rate using an optional heart rate transmitter belt. Adjust the belt to fit snuggly, located just below your chest as shown (Fig. 6).

> Heart Rate Control Programs (NE 2000/ 3000)

The Heart Rate Control Programs are designed to keep you exercising at exactly your target heart rate. This is done by constantly monitoring your heart rate through either the touch sensors or optional transmitter belt and adjusting the resistance level up or down to maintain your target heart rate.

> fig.6

1. To begin the Heart Rate Control Program, select the Heart Rate Program from the program selection menu and press ENTER to confirm.
2. You will now need to enter age and weight.
3. Your target heart rate will then be displayed. This number is 70% of your maximum heart rate.

Example: 220 – Age (40) = 180
180 beats per minute is the approximate maximum heart rate for someone 40 years of age.
180 x 70% = 126
126 beats per minute is the target heart rate that the computer will keep you working at.

IMPORTANT! The above numbers are general fitness guidelines. You should consult your physician to establish your ideal target heart rate for your specific condition and fitness goals.

4. To accept this target heart rate number press ENTER. You can adjust this number using the + and – keys to select your desired target heart rate.

OPERATION

> Custom Programs NE 2000/ 3000

Your computer allows you to create and store your own programs you design.
1. To create a Custom Program, select Custom One or Custom Two from the Program Selection menu then press the RESET key. Use the + and – keys to change the course profile. Press ENTER to confirm each segment level.
2. After a Custom Program has been created, you can simply select this program from the main program menu as you would any other program. To alter a Custom Program, simply repeat step 1.

DESCRIPTIONS OF READOUTS NE 2000/ 3000

> Features and Readouts of the NE 2000/ 3000 Computers

The computer keeps track of a variety of feedback functions. When a particular FUNCTION LED is on, that function readout will appear in the corresponding window.

> Readout Definitions

Watts > The watts feedback function keeps track of the approximate power required to pedal the machine. To change to the next function press the scan button.

Calories > The calories feedback function displays the approximate number of calories burned during your workout. To change to the next function press the scan button.

Mets > This is measurement of oxygen consumption. Mets is typically used in rehabilitation and physical therapy environments.

Heart rate > If you are using a chest strap transmitter or touch sensors, the heart rate feedback function continuously displays your working heart rate in beats per minute.

Level > Displays the current level of resistance or program level. If the heart rate is being used the level will display for 3 seconds when changed and then return to the heart rate display.

Speed > The speed feedback function keeps track of your approximate mile or km per hour rate. To change to the next function press the scan button.

Average Speed > This readout continuously updates and displays your average speed for the workout.

RPM > The rpm feedback function keeps track of your pedal speed in revolutions per minute. To change to the next function press the scan button.

Segment Time > This is the remaining time in the course profile segment. When the segment time is completed, you will advance to the next segment of the workout.

Time > If a workout time is entered the remaining time of your workout will be displayed. If there is no time entered the workout time will be displayed. To change to the next function press the scan button.

Distance > The distance feedback function approximates the miles you've covered in your workout. To change to the next function press the scan button.

Scan > The scan function will continuously rotate through the above feedback functions.

ADDITIONAL INFORMATION

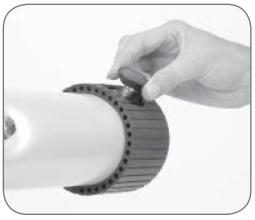
> fig.7

> Moving your machine

To move your machine, carefully lift the back end of the unit and steer using the stabilizer tube. Be gentle while moving the unit as any sharp impact directly or indirectly to the computer can affect computer operation.(Fig.7)

IMPORTANT: Be careful when moving your machine as it is heavy and awkward. If you do not feel comfortable moving the unit by yourself, get help. The transport wheels are designed for indoor use only and should not be used to
--move the unit over rough surfaces such as concrete or asphalt.

> fig.8



> Leveling your elliptical trainer

Your machne can be leveled to compensate for uneven surfaces. To level the machine, raise or lower the two leveling bolts located on the underside of the rear stabilizer by screwing them in or out as needed. (Fig.7)

> Maintenance

Your Nautilus elliptical requires very little routine maintenance. To ensure your machine's performance for many years to come it is important to keep your machine clean of dirt and sweat. Use a damp cloth to wipe your machine and computer free of sweat.

IMPORTANT: To avoid damaging the finish on your machine and computer, never use a petroleum-based solvent when cleaning. Avoid getting excessive moisture on the computer. Never store your machine outside or in a uncovered area.

NAUTILUS EXERCISE EQUIPMENT MANUAL

Edmund R. Burke, Ph.D.

> Getting the Most Out of Your Home Fitness Program

The three main reasons for the increased popularity of home fitness gyms and exercise are convenience, convenience and convenience. For any fitness program to be successful, it must be done on a regular, sustained basis. With equipment in your home, you can roll out of bed, put on a pair of sweats, and start working out while the coffee is brewing.

For many, home workouts are easier to fit into their hectic schedules. No getting in the car and having to go to the health club. No standing in line to use the stair climber. Then there is the comfort and safety factor. Who wants to run outdoors during a raging blizzard. Or, who wants to ride a bike on busy city streets during rush hour in the heat of summer. It's much more comfortable to hop on your Nautilus fitness equipment and exercise in the comfort and security of your air-conditioned room.

Privacy and cleanliness are also important. Many feel intimidated in a gym, especially if they are carrying around a few extra pounds. At home you can exercise without feeling as if you are being rushed or that anyone is looking at you. No more lying down on a sweaty bench or wondering if you'll catch athlete's foot in the shower.

Flexibility of time may be the biggest advantage. Work schedules vary for many people who work flex shifts or have a family that has different schedules. Parents with children soon discover that exercising at home turns out to be the only viable alternative if they want to stay fit. But parents and busy workers may not be the only ones who benefit from exercising at home.

> The Stanford Home Exercise Study

Recently, researchers at Stanford University School of Medicine, conducted a year long study of over 350 individuals to examine the effectiveness and compliance of a group of supervised home exercisers versus a group of individuals who reported for a group session at the university. The subject population included middle aged men and women and included fit individuals as well as individuals who were overweight and smoked.

Individuals in both the high intensity (three 40-minute sessions per week on the treadmill at a 73 to 88 percent of max heart rate) and low intensity group (five 30-minute sessions at 60-71 percent of max heart rate) reported significantly greater adherence than those in the university group based program.

Many at the beginning of the study thought that the university based group would have a greater compliance rate than the home based group, because of the camaraderie of the group and the instruction given by the instructors. But the study found the opposite to be true. The group program was just too inconvenient over the 12 month period for the subjects to justify the benefits.

But the good news was that all three groups showed fitness improvements. With the individuals in the low intensity group achieving similar results as the high intensity group. Good news for those of you just starting out in a moderate exercise program.

Perhaps most importantly, research has also shown that it's never too late to start exercising . . .and experiencing the benefits. Studies conducted at Tufts University, for instance, show that even people in their 90's can significantly increase their strength as a result of following a moderate, strength training program.

Exercise is one of life's joys. It energizes–it gives you a sense of well-being and accomplishment and it keeps you healthy and fit. There is great pleasure in being able to set goals, accept your own challenges and push yourself to a better life of health and fitness.

Once you have made the commitment to get started in a home fitness program, here are some suggestions that you may want consider to help you:

GUIDELINES

> Get off on the right foot and stay motivated. Realize that any new habit is difficult to establish at first, but it can be done. Follow these steps and you'll be on your way to establishing and using your home fitness center for improved health and fitness. Enjoy the journey!

> Get a physical exam. If you have been inactive for several years or new to an exercise program, be sure to consult with your family physician. Especially if you're over 35, have health problems or have a history of heart disease in your family.

> Begin planning for your home fitness center. Set aside a portion or a room in your house or apartment that is exclusively for fitness, and make sure that it is as comfortable as possible so you'll enjoy using it. If you like music or like to look outside while exercising, make sure these things are accessible. Do not force yourself to exercise in a part of the house that isn't comfortable, you will not feel motivated to exercise.

> Do you need a companion? If you prefer to exercise with someone, find a friend to train with who lives nearby. Encouraging your spouse or children to exercise with you is an excellent way to stay motivated and promote family unity.

> Make fitness a part of your daily lifestyle. Include it in your daily planner just as you would any other appointment. Keep the appointment; you'll be glad you did.

> Use affirmations. Affirmations will help you program your subconscious to accept new beliefs. They should be positive statements. "I am living a healthier lifestyle by exercising several times per week at home." Repeat your affirmations several times per week.

> Home Fitness Planning Worksheet

Target date to begin exercise program:_____

Times of day I can exercise:

Time #1_____

Time #2_____

Time #3_____

Days of the week that are good for me to workout:

Day #1_____

Day #2_____

Day #3_____

Activities I would like to experiment with:

Activity #1_____

Activity #2_____

Activity #3_____

Exercise goals I wish to accomplish:

Goal #1_____

Goal #2_____

Goal #3_____

STEPS TO GETTING STARTED

> Muscular Strength

The new guidelines have added resistance training since the ACSM recognizes the increasing importance of maintaining strength as a health benefit as we get older. The rationale for the addition of strength training to the guidelines is a result of a ten year follow-up study on master runners (along with other studies). Those who continued to train aerobically without upper body exercise maintained their body's oxygen transporting capacity over the years, but lost about 4.5 pounds of lean body mass; those who included strength training in their program maintained their lean body mass along with their aerobic capacity after 10 years of aging.

The guidelines also show where consistent resistance training helps maintain bone and muscle mass as we get older. For women, strength training (along with the aerobic work) may also protect against post menopausal bone loss and osteoporosis in their later years.

The guidelines recommend that two strength training sessions per week should be added to your workout schedule. We recommend three sessions a week during the off-season and two sessions a week for maintenance during the in-season. The new ACSM guidelines recommend one set of eight to 12 repetitions of eight to 10 strength exercises of your major muscle groups per session as the minimum requirement. A complete detailed strength training program will be outlined in a later section of this book. If weights or other resistance training devices are not available, add calisthenics to your program.

> Cardiovascular Fitness

The new statement, published in 1991, repeats the four recommendations on duration, intensity, frequency and various modes of aerobic activity, with slight changes. The duration is now 20 to 60 minutes, versus a minimum of 15 minutes in the past.

Intensity of exercise can be determined by two methods. The first is the familiar use of target heart rate. The guidelines state that you should aim to work at 60 to 85 percent of your maximum heart rate (max HR = 220 - your age) or 50 to 85 percent of your maximal oxygen capacity (determined by doing a stress test on a bicycle ergometer or treadmill at a medical facility).

Duration is dependent upon the intensity of the activity; for those who like to work at a lower intensity they should work out longer. Low to moderate intensity cycling, stepping, walking, or cross-country skiing is best for most adults, because higher intensity workouts can lead to increased risk of injury and it is easier to adhere to the exercise routine. Beginners can achieve a significant training effect from low intensity workouts. If you're already fit and want to improve, gradually increase your intensity.

The type of activity, once again, should include anything that uses large muscle groups, and is rhythmical and aerobic in nature, such as cycling or running. Other activities could include stair climbing, cross-country skiing, walking, etc. These activities need to be carried out three to five days per week.

> Training Effect

Duration, intensity and frequency of training stimulate the aerobic training effect. Any training done below the ACSM guidelines will not be sufficient enough to give you the aerobic training effect. If you are exercising more than the recommendations, it will not significantly increase the aerobic training effect, though athletes training for competition need to exercise more to be competitive. It is important to remember not to over do it; your body needs adequate recovery from a hard workout.

In general, endurance training for fewer than two days per week at less than 60 percent of maximal heart rate, for fewer than 20 minutes per day, and without a well-rounded resistance and flexibility program is inadequate for developing and maintaining fitness in healthy adults. It is just that simple.

Keep in mind that the ACSM recommendations are guidelines for the average person, not a champion athlete training for the Olympic Games.

An appropriate warm-up and cool-down, which would also include flexibility exercises, is also recommended. While many of you will need to train with more mileage and at a greater intensity to race competitively, the important factor to remember for most people is that if they follow the ACSM guidelines of physical activity they will attain increased physical and health benefits at the lowest risk. Below is a table outlining the guidelines (Table 1.1).

The ACSM guidelines, if followed, can result in permanent lifestyle changes for most individuals. The good news is that, with the right approach, exercising at home can and should be pleasant. You can combine strength training, aerobic exercise and flexibility activities that you enjoy and gain valuable health benefits.

	Strength Training	Aerobic Exercise	Stretching
Frequency	2 to 3 times/week	3 to 5 times/week	3 to 6 times/week
Intensity	8-12 reps until fatigue	60-80% of max HR	
Time	20-40 minutes	20-60 minutes	10 minutes
Type	10 exercises	any rhythmical activity	10 stretches

> Flexibility

To be in total balance it is important to be flexible. While not part of the ACSM guidelines, flexibility is important for you to perform tasks that require reaching, twisting and turning your body. Hip flexibility, for example, is important to preventing lower back pain.

> Exercise and Body Composition

Body composition is an important component of health-related fitness. Good body composition results from aerobic activity, strength training and proper diet.

Your everyday caloric balance will determine whether you will gain or lose weight from day-to-day. Caloric balance refers to the difference between the calories you take in from food eaten and caloric expenditure or the amount of energy you put out in daily activities, work or exercise.

Body weight is lost when caloric expenditure exceeds caloric intake or when caloric intake is less than caloric expenditure. It is a known physiological fact that one pound of fat is equal to 3500 calories of energy. Though it is predictable that shifts in caloric balance will be accompanied by changes in body weight, how your body loses weight varies on the various programs you may undertake to lose weight. For example, low calorie diets cause a substantial loss of water and lean body tissue, such as muscle. In contrast, an exercise-induced negative caloric balance results in a weight loss of primarily fat stores. If you were to add a resistant training component to your program, you may also see a slight increase in weight due to a gain in muscle mass, while an aerobic based program usually results in a maintenance of muscle mass. While both approaches to weight loss are effective, aerobic activity is found to be very effective because metabolism stays sustained for longer periods of time and energy. Expenditure is greater with activities that use large muscle groups such as walking, cycling, cross-county skiing, etc.

Follow these guidelines when engaging in a weight loss program that combines exercise and caloric restriction:

> Ensure that you are consuming at least 1,200 calories per day in a balanced diet. You need to consume calories for everyday bodily, healthy functions.

> You should not exceed more than a 500 to 1,000 calories per day negative caloric balance, combining both caloric restriction and exercise. This will result in a gradual weight loss, without a loss of lean body weight (muscle). You should not lose more than 2 pounds per week on a diet.

GUIDELINES

IDENTIFYING YOU BALANCED FITNESS GOALS

> Include an exercise program that provides as least 300 calories or more of activity per day. This is best accomplished with exercise of low intensity and long duration. Many pieces of home fitness equipment give estimates of calories burned while exercising. Remember these are approximate calories burned, exact amounts will depend on type of exercise, your body size, intensity and duration.
> Add resistance training to your program to add muscle mass. Muscle cells are more active than fat cells and will help you burn more calories per day.
> Include use of behavior modification techniques to identify and eliminate bad diet and eating habits.

You should strive to burn between 300 to 500 calories per exercise session and 1000 to 2000 calories per week in exercise. Remember that sustained aerobic activities that use large muscle group will cause the greatest energy expenditure.

If overweight or obese, you may want to keep the intensity even lower than 60 percent of maximum heart rate to keep the risk of orthopedic injuries at a minimum. Nonweight-bearing activities such as stationary cycling may be considered for this group, or for those who suffer from orthopedic or arthritis problems.

> A Balanced Workout All of your balanced home workouts should include three parts:

> Warm-up
> The main aerobic and/or strength routine
> Cool-down

Together, exercise and recovery comprise fitness conditioning: deny either and you invite injury and minimize benefits. Our bodies and minds become stronger and more efficient in response to their use and exercise. Overuse and overload will cause breakdown. You don't want too much, but just enough.

The secret is to know when you are pushing too much or too little. Monitoring your heart rate tells you how much to exercise and when to rest.

> Warm-up

A good warm-up will help you perform better and will decrease the aches and pains most people experience. The warm-up prepares your muscles for exercise and allows your oxygen supply to ready itself for what's to come. Studies show that muscles perform best when they're warmer than normal body temperatures. Warm-up exercises include cycling, walking, skiing slowly until you begin to break a light sweat. This normally takes about 5 to 10 minutes. If using a heart rate monitor, raise your heart rate to about 110 to 120 beats per minute during your warm-up.

Stretching before and after exercise also serves many purposes. By promoting flexibility, it decreases the risk of injury and soreness. It also enhances physical performance by allowing you to maintain a comfortable position on the bicycle longer. Take a few minutes to stretch your legs, shoulders and lower back before you get on your home equipment.

> Aerobic/ Strength Exercise

Vigorous aerobic exercise is the core of your workout program. The intensity of your exercise must be strenuous enough to raise your heart rate into your target zone. This is usually between 60 and 90% of your maximum heart rate. Cycling, or any exercise done in this range, is usually called aerobic exercise. It means your body, your heart, and the various exercising muscles are working at a level at which oxygen can be utilized. Exercising with a heart rate monitor allows you to constantly receive visible feedback (and on some models audible feedback) as to what your heart rate is while exercising, and allows you to stay within your selected target heart rate zone.

In addition to aerobic exercise, the ACSM recommends that healthy adults perform a minimum of 8 to 10 strength exercises involving the major muscle groups a minimum of two times per week. At least one set of 8 to 12 repetitions to near-fatigue should be completed during each session.
These recommendations are based on two factors:

> Most people aren't likely to adhere to workout sessions that last more than 60 minutes. The regimen outlined above can be completed in 30 minutes or less, and when combined with 30 minutes of aerobic activity and flexibility gives you a balanced workout.
> While more frequent and intense training is likely to build greater strength, the difference is usually very small.

> Cool-Down

The cool-down enables your body's cardiovascular system to gradually return to normal, preferably over a 5 to 10 minute period. Bringing your workout to an abrupt halt can cause light-headness, since blood will pool in your legs if you abruptly stop working. Lower your exercise intensity gradually over a period of a few minutes. When your heart rate has returned to below 110 beats per minute you can stop exercising on whatever piece of equipment you are on.

Always keep in mind that warm-up and cool-down are just as important as the activity phase. Both can prevent many common injuries from occurring.

> How To Determine Your Maximum Heart Rate

The best way to determine your maximal heart rate is to calculate your target heart rate zones. Simply record your heart rate several times when you are putting out a maximal effort, such as when you are going all out on a stationary bicycle, or during a hard session of stair climbing.

The easiest option is to estimate your maximum heart rate based on a formula which has been well-established for reliability: take the number 220, and subtract your age. For example, a 45 year old would have an estimated maximum heart rate of 175 (220 - 45 = 175). The target heart rate zone for aerobic training would be 105 to 149 beats per minute (60 to 80 percent of the maximum).

> Target Heart Rate Training Zones

There are three primary heart rate training zones. The first is often referred to as the "fat burning zone", because the intensity is moderate enough to require your body to primarily use fat as the fuel source for the exercise. You should exercise at 50 to 65 % of your maximal heart rate to achieve this level of intensity. While you workout in this and the other zones, your heart rate should fall somewhere between these two figures. People just starting out on an exercise program or who want to lose weight should concentrate on maintaining their heart rate in this zone for 20 to 30 minutes per day, 3 to 5 days per week.

The second zone discussed above is known as the "aerobic exercise zone" or is shown on many charts as the "target heart rate zone." In this zone you should exercise at 60 to 85% of your maximal heart rate. Training in this zone helps you build aerobic endurance and constructs a base upon which you can progressively add more demanding workouts as your cardiovascular fitness increases.

A higher level of training can help increase both your speed and tolerance for the buildup of lactic acid, the primary waste product of anaerobic metabolism in your muscles. This type of workout from 85 to 100% of maximum heart rate usually consists of short, hard sprints or repeated hill running and is referred to as "anaerobic training."

TABLE 1 EXERCISE GUIDELINES

Varied training in all three of these zones will add to increased levels of fitness and improved performance and add more energy to your life. "Most training programs use a combination of training intensities to increase performance capacity," according to J. T. Kearney, Ph.D., Senior Exercise Physiologist at the U. S. Olympic Training Center in Colorado Springs. Kearney suggests that it is important for individuals to monitor intensity. "There are many different ways to monitor training but monitoring heart rate response is the simplest, most convenient and least expensive physiological method for monitoring training," Kearney says.

> Predicted Target Heart Rate Zones for Different Ages

Age	Maximum Predicted Heart Rate Zone:	Aerobic Target 60-85 %
20	200	120-170
25	195	117-166
30	190	114-162
35	185	111-157
40	180	108-153
45	175	105-149
50	170	102-145
55	165	99-140
60	160	96-136

After several weeks of "aerobic conditioning," certain changes become apparent. What was a barely attainable level of exercise before, now becomes quite easy. Whereas cycling or running at a certain pace or speed may have previously caused your heart rate to go up to 135 beats per minute, that pace can now be achieved at a lower heart rate. In short, your heart is becoming stronger, larger and more efficient, and your body is able to do the same work with less stain.

Regardless of your maximum average heart rate or your target heart rate, you should consult with your physician or with a sports medical expert to establish, with precision, the rates that are right for you, your age and your medical and physical condition. This is especially important if you are over the age of 35, been sedentary for several years, overweight or have a history of heart disease in your family.

> Beating The Dropout Odds: Jump Start Your Fitness Program

You already know you need to exercise. And you're probably trying – at least a little. But let's get serious: If you don't add regular exercise to your life, you're missing out on a sure bet. This is one area where medical research all points in the same direction.

"Starting to exercise is comparable, from a health benefit standpoint, to quitting smoking," says the recently released Surgeon's General Report on Physical Activity and Health.

> To sum up the recent report:

> Regular physical activity offers substantial improvements in health and well-being for the majority of Americans.
> If you exercise regularly, the reports show, you'll reduce your risk of heart attack, cancer, diabetes, high blood pressure, osteoporosis, and even the common cold.
> Regular exercise, regardless of the intensity, can help you control stress, sleep problems, and depression.

But even with all this evidence, only 22 percent of Americans engage in exercise for 20 minutes a day. And even among individuals who begin exercise programs, the dropout rate is about 50 percent.

So if the Surgeon General's findings are not convincing evidence enough to keep most us exercising on a consistent basis, what is?

Scientists are finding that the process of beginning, increasing and ultimately sticking to an exercise program is a combination of two elements: finding the right incentives and building a habit. And, as we will see, these two motivational factors are connected, but distinct.

Focusing on the positive is one of the best incentives to exercise. Avoid looking at exercise as a way to fix something that's wrong with your body. Instead, focus on your successes. Pat yourself on the back each time you've made it though a workout. Thrive on the energy that exercising gives you. Reward yourself with a dinner out, after you have reached a certain weight loss goal, or buy yourself a new workout outfit. With these rewards, you'll go back for more, and your body will show results.

Don't view exercise as punishment. Don't look at exercise as something that has to be tackled because you are out of shape. Think of exercise as an investment in your health, your physical looks and your mental outlook. As you run, walk or lift weights, concentrate on the positive energy being generated within your body and the renewed sense of life and wellness you feel.

The basics of any fitness program are planning and setting goals. Goal setting and formulating a plan are the most clear ways of establishing a consistent program of exercise; they are also a powerful form of direction and motivation. Take some time to think about what will help you begin your exercise program. Write these down in your daily planner or diary. Goals provide a sense of purpose and incentive that can drive you to your intended destination. However, for goals to be effective they need to be realistic. Motivation will be strengthened only if it's possible to reach your objectives.

Consider this: Your mind and body will respond better to exercise if you start with 20-minute sessions, three times a week, rather than an hour session four times per week. Once the sessions become a routine, aim for 30 minutes, then increase from there.

The most important thing in any exercise program is to do your best to keep progressing, backsliding as little as possible and getting back on the horse just as fast as possible if you fall off. Try to anticipate lapses: If a crazy workday looms, get up early and squeeze in a short ride on a stationary bicycle so that you've achieved something even if it isn't your regular workout routine. When on a business trip, stay in a hotel that has an onsite workout facility.

Exercise is one of life's joys. It energizes – giving you a sense of well-being and accomplishment and keeps you healthy and fit. There is great pleasure in being able to set goals, accept challenges, and push yourself to a better lifestyle of health and fitness. No matter what your reason for exercising – to lose weight, to get fit, or to feel better –- motivating yourself to exercise on a regular basis requires changing your behavior.

> Make Exercise A Habit

The key to a successful fitness program is getting your body to do what your mind knows it should. Here are six mental strategies to help keep you focused on your fitness goals.

1. Clarify why you want to exercise. If you want to gain strength – is it to swim more laps, or to tone-up your body. By understanding and detailing your goals, you will be better able to stay motivated.
2. Vary your workout. To make your routine more enjoyable, vary it once in a while. Supplement your indoor cycling with outdoor cycling and strength training. These activities make exercise more interesting and increase your fitness level by making you utilize different muscle groups.
3. Focus on the positive. Avoid looking at your exercise program as a way to fix something that's wrong with your body. Instead focus on your successes. Congratulate yourself after each workout. Thrive on the energy that exercising gives you.

4. Develop a constructive attitude. Do not focus on what you are giving up to exercise on a regular basis, but on what new options you'll have after you become fit.
5. Engage your body and mind. Connect on a deeper level, you'll be more likely to stay with your routine. If your exercise time on a stationary bike
is your 30-minutes away from work or a time for reflection, you're much more likely to stick with it. Individuals claim to experience an increased sense of creativity and an enhanced thought process due to a regular exercise program.
6. Consider many of the physiological benefits. If a strong and fit body isn't enough to keep you motivated, consider some of the hidden benefits of exercise: lower blood pressure, stronger heart, more efficient pulmonary system, lower risk of osteoporosis and stress reduction.

> It's Never Too Late . . . for Fitness

Most of us have very busy schedules and to keep our fitness level intact we have to be extremely efficient. These three words, efficiency of effort, form the core of creating your own home fitness center. Efficiency of effort means producing maximum gains with minimal time spent; this is the goal of most of us when designing our home fitness program.

The bottom line is you must be creative and innovative to get the best results. With this book and your own creativity a great workout is only a few moments away; a different grip on the multi-gym, a varied stepping rhythm on the stepper, a new intensity on the stationary wind-load simulator or a more rapid stroke rate on the rower. By varying your workouts you'll create maximum gains in the shortest time frames.

As you will see, your home fitness equipment will allow you to reach your fitness goals and prepare properly for a healthier lifestyle. Anyone who is serious about fitness – or for that matter just improving their overall fitness – should have a few basic pieces of home fitness equipment. It makes no difference if you are a competitive cyclist or triathlete, an executive or someone trying to tone their muscles, the home fitness center is the most efficient way to help you reach your physical potential.

Edmund R. Burke, Ph.D., is author of the Complete Home Fitness Handbook, published by Human Kinetics Publishers. It can be found at major book stores or you can order it by calling 1-800-747-4457. He also serves as Director of the Exercise Science Program at the University of Colorado at Colorado Springs.

> Suggested Readings

Burke, Edmund. Complete Home Fitness Handbook, Champaign, IL., Human Kinetics Publishers, 1996. Book illustrates how to set up a home gym, purchase equipment and gives workout programs for various pieces of home fitness equipment.

Anderson, Bob; Pearl Bill; and Burke Ed. Getting in Shape: Workout Programs for Men & Women. Bolinas, CA., Shelter Publications, 1994. Offers information on how to set-up a balanced fitness program of cardiovascular, strength and flexibility training.

Burke, Edmund. Precision Heart Rate Training. Champaign, IL., Human Kinetics Publishers, 1998. Fine-tune your workout intensity. This book fully explains why and how to train with a heart rate monitor.

WARRANTY

All Nautilus exercise products are warranted to the retail purchaser to be free from defects in materials and workmanship. Warranty coverage valid to the original purchaser only and proof of purchase will be required. Any product sold or placed in an application not recommended by Nautilus will void any warranty coverage set forth by Nautilus warranty policies and procedures.

Time Period

Residential Use:

30 years on frame. Parts are covered for 3 years. Electronics are covered for 2 years.
Labor is covered for one year from date of original purchase.

Institutional Use (NE 3000 only):

15 years on frame. Parts are covered for 2 years. Electronics are covered for 2 years.
Labor is covered for one year from date of original purchase.

This warranty does not cover

1. Any component on original equipment which carries a separate consumer warranty of the parts supplier.
2. This warranty excludes wear items that need to be replaced due to normal wear and tear.
3. The Nautilus institutional warranty is limited to light-commercial settings such as hotels, schools, apartments or hospitals. This product is not warranted for health club use.
4. Any damage, failure or loss caused by accident, misuse, neglect, abuse, improper assembly, improper maintenance, or failure to follow instructions or warnings in Owner's Manual.
5. Use of products in a manner or environment for which they were not designed.

Limitations

The foregoing warranties are in lieu of and exclude all other warranties not expressly set forth herein, whether express or implied by operation of law or otherwise, including, but not limited to, warranties of merchantability or fitness for a particular purpose. Nautilus shall in no event be liable for incidental or consequential losses, damages or expenses in connection with its exercise products. Nautilus's liability hereunder is expressly limited to the replacement of goods not complying with this warranty or, at Nautilus's election, to the repayment of an amount of the purchase price of the exercise product in question. Some states do not permit the exclusion or limitation of implied warranties or incidental or consequential damages, so the preceding limitations and exclusions may not apply to you.

Procedures

Warranty service will be performed by Nautilus or an authorized Nautilus Fitness Dealer. The original purchaser must provide proof of purchase. Service calls and/or transportation to and from the Authorized Nautilus Dealer is the responsibility of the purchaser.

1. Nautilus will have the option to repair or replace any exercise product(s), which require warranty service.
2. Nautilus will replace any equipment frame that is structurally defective with a new frame or replace the unit with a unit of equal value. Nautilus is not responsible for labor charges in replacing defective frames.
3. In the event a product cannot be repaired, Nautilus will apply a limited credit reimbursement toward another Nautilus exercise product of equal or greater value.
4. Nautilus is not responsible for dealer labor charges for component changeovers completed after the labor-related warranty period(s) stated herein.
5. If you elect to repair an exercise product or part yourself, using the services of someone other than an Authorized Nautilus Dealer, or use a replacement part not supplied by Nautilus, Nautilus shall not be liable for any cost, damage, failure or loss caused by the use of such unauthorized service or parts.
6. See your Authorized Nautilus Dealer for service or write to:

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Nautilus Health & Fitness Group, 1886 Prairie Way Louisville, CO 80027

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